Introduction

Background

In August 1999, the Washington Office of the USDA Forest Service published Miscellaneous Report FS-643 *Roads Analysis: Informing Decisions about Managing the National Forest Transportation System*. The objective of roads analysis is to provide decision-makers with critical information to develop road systems that are safe and responsive to public needs and desires, are affordable and efficiently managed with negative ecological effects minimized to the extent feasible, and are in balance with available funding for needed management actions.

In October 1999, the agency published Interim Directive 7710-99-1 authorizing units to use, as appropriate, the road analysis procedure embodied in FS-643 to assist land managers making major road management decisions.

On January 12, 2001, the Forest Service issued the final National Forest System Road Management Rule. This rule revises regulations concerning the management, use, and maintenance of the National Forest Transportation System. Consistent with changes in public demands and use of National Forest System resources as well as the need to better manage funds available for road construction, reconstruction, maintenance, and decommissioning, the final rule removes the emphasis on transportation development and adds a requirement for science-based transportation analysis. The final rule is intended to help ensure that additions to the National Forest System road network are those deemed essential for resource management and use; that construction, reconstruction, and maintenance of roads minimize adverse environmental impacts; and that unneeded roads are decommissioned and restoration of ecological processes are initiated.

The current manual direction related to Road Analysis is found in Amendment 7700-2003-2 (December 16, 2003), which revises Chapter 7710 of Forest Service Manual 7700 – Transportation System. This several earlier amendments and interim directives addressing transportation atlas, records, and (road) analysis are superseded by this latest amendment.

An optimum road system supports land management objectives. For the Forest Service, those objectives have markedly changed in recent years. How roads are managed must be reassessed in light of those changes. Expanding road networks have created many opportunities for new uses and activities in national forests, but they have also dramatically altered the character of the landscape. The Forest Service must find an appropriate balance between the benefits of access to the national forests and the costs of road-associated effects to ecosystem values. Providing road systems that are safe and responsive to public needs, environmentally sound, affordable, and efficient to manage is among the agency's top priorities. Completing an assessment of the existing road system is a key step toward meeting those needs.

Roads analysis is an integrated ecological, social, and economic approach to transportation planning, addressing both existing and future road systems. The analysis is designed to be scaleable, flexible, and driven by road-related issues important to the public and agency. It uses a multi-scale approach to ensure that these issues are examined in context and provides a set of analytical questions to be used in fitting analysis techniques to individual situations. Roads analysis is intended to complement and integrate existing laws, policy, guidance, and practice into the analysis and management of roads on national forests.

The detail of the analyses must be appropriate to the intensity of the issues addressed. Where ecosystem analyses or assessments are completed, roads analysis will use that information rather than duplicating efforts. Roads analysis may be integrated as a component of watershed analysis, landscape assessments, and other analyses supporting existing decision processes.

Roads analysis neither makes decisions nor allocates lands for specific purposes. Line officers, with public participation, make decisions on roads through the NEPA process. The roads analysis report informs the decision-maker about effects, consequences, options, and priorities, and provides information about important ecological, social, and economic issues.

Roads analysis may be conducted at multiple scales to inform road management decisions. Generally, road management decisions should be informed by roads analysis at a broad scale. Accordingly, all units of the National Forest System are required to conduct a forest-scale roads analysis (FSM 7710, Section 7712.15). The required completion date was January 13, 2003, however the Malheur National Forest requested and was granted an extension.

Roads analysis at the forest-scale will generally provide the context for informing road management decisions and activities at the watershed, area, and project level. However, it is generally expected that road inventories and road condition assessments such as 1) identification of needed and unneeded roads; 2) identification of road associated environmental and public safety risks; 3) identification of site-specific priorities and opportunities for road improvements and decommissioning; 4) identification of areas of special sensitivity, unique resource values, or both; and 5) any other specific information that may be needed to support project-level decisions would be best completed at the sub-forest scale (watershed or project scale), not the forest scale.

A roads analysis is not intended to produce recommendations for a “final” road system. It is intended to assess the existing road system and reasonably foreseeable needs for road access, and to make recommendations for changes based on that assessment. Just as with a Watershed Assessment, as new information becomes available or needs and situations change in the future, the road system will need to be assessed again to determine if other changes in the road system are needed.

Process

Roads analysis is described in FS-643 as a six-step process. The steps are designed to be sequential with the understanding that the process may require feedback and iteration among steps over time as an analysis matures. The amount of time and effort spent on each step differs by project based on specific situations and available information. The process provides a set of possible issues and analysis questions for which the answers can help managers make choices about road system management. Decision-makers and analysts determine the relevance of each question, incorporating public participation as deemed necessary. The six-step process served as an outline for the Forest-level Roads Analysis. The six steps of the process are:

Step 1. Setting up the analysis

Step 2. Describing the situation

Step 3. Identifying the issues

Step 4. Assessing benefits, problems and risks

Step 5. Describing opportunities and setting priorities

Step 6. Reporting (Key Findings)

Assumptions

This analysis was done considering these assumptions:

- The need for a basic transportation system will continue to exist. Roads will continue to be used for administration, recreation, timber harvest, fire protection, permit and contract access, special uses, mining, and other traditional uses.

- Available maintenance dollars are likely to continue to decline compared to historic levels in the foreseeable future. Any increases in funding that might occur are likely to be focused on bridges and culvert improvements or replacements that are related to improving aquatic species passage.

- Roads can adversely affect water quality and riparian habitat;

- Poor road conditions can present a hazard to users, and liabilities to the Forest;

- The analysis will focus on roads that are determined to be part of the minimum primary road system; including Forest arterial and collector roads other local roads that have high recreation or resource values, or both. Some of the minimum

primary system roads or segments of them may be identified as needing relocation or realignment for environmental or safety reasons.

- Roads that are currently Operational Maintenance Level 1 roads are intended to be closed, and remain closed, except during periods when they are temporarily needed for resource use, like timber harvesting, or other use by permit. In these cases they would be open for only a specified period of time.

- Operational Maintenance Level 2 roads that are not part of the minimum primary road system are to be analyzed in sub-forest road analyses, and are *potential* candidates for closure, or decommissioning if a determination is made that they are no longer needed. Operational Maintenance Level 2 roads that are determined through this analysis to be part of the potential minimum primary road system are recommended to remain open. In some cases they may be recommended for improvements and/or a higher Operational Maintenance Level.

- As open road densities are reduced through road closures and decommissioning, traffic volumes are expected to increase on the roads that remain open. Consequently, increased maintenance or other road improvements may be necessary to safely accommodate traffic on roads that remain open.

- This analysis does not evaluate or propose any specific new road construction or entries into inventoried roadless areas**.** Any potential changes to inventoried roadless area management will be addressed in the Forest LRMP revision process.

- This analysis will only make recommendations; any decisions to close or decommission roads will be done under project NEPA processes and decisions.

Limitations

Most of the existing road mileages and locations used for this analysis and included in this document were generated through queries of the Forests Geographical Information Systems (GIS) database or the Forests infrastructure (INFRA) database. Road information stored in these databases, such as road location or length, is often slightly different in one database compared to the other. The information in each database will also vary slightly from actual locations and lengths.

While the information in the database is not 100 percent accurate, the road mileages overall are not expected to vary significantly from the numbers used, and the GIS database represents the best information the team had available for the analysis.

Products

The product of a Forest-scale roads analysis is a report for agency decision-makers, the public, and other interested parties that documents the information and analyses used to

identify opportunities and set priorities for future national forest road systems (FSM 7712.13b-2).

This report documents the information and analysis procedure used for the Forest scale roads analysis conducted for all Forest Lands administered by the Malheur National Forest, including that portion of the Ochoco National Forest that was formerly the Snow Mountain Ranger District. The report includes:

- **Appendix A:** Road tables listing each road or road segment that was analyzed, and relative watershed and aquatics risk ratings for each road or road segment, existing and recommended maintenance levels, and other information.

- **Appendix B:** Maps display the current objective maintenance level 3, 4, and 5 roads, the recommended minimum primary roads system, and any recommended changes to the existing Operational Maintenance Levels for those roads. It also includes maps that display overall watershed and aquatic risks for Forest Lands in each sub-watershed (6^{th} Level HUC) on the Forest.

- **Appendix C:** Discussion and answers to questions related to the benefits, problems, and risks of the Forest road system.

- **Appendix D:** Describes in detail the methods used to determine overall watershed and aquatics risk at the sub-watershed scale, and includes tables that show the results of this portion of the analysis.

- **Management Guidelines and Opportunities:** Chapter 5 includes guidelines and opportunities that can help inform and guide future actions and decisions that will impact the Forest roads system.